Think not lightly of good, saying, "It will not come to me."
Drop by drop is the water pot filled.

Likewise, the wise one, gathering it little by little, fills oneself with good.

Dhammapada 9.122
Neurodharma: Buddhist Practice with the Brain in Mind

Community Dharma Leaders
Barre Center for Buddhist Studies
July, 2015

Rick Hanson, Ph.D.
www.RickHanson.net
Wellspring Institute for Neuroscience and Contemplative Wisdom
Foundations
Coming into presence in this moment as it is. Letting go while abiding as mind as a whole.

Abiding as mind as a whole, also opening into a growing sense of:

• Peace
• Contentment
• Love
Common - and Fertile - Ground

Neuroscience  Psychology  Contemplative Practice
We ask, “What is a thought?”

We don’t know,

yet we are thinking continually.

Venerable Tenzin Palmo
Mental Resources
What Shapes the Course of a Life?

Challenges

Vulnerabilities

Resources
Where Are Resources to Be Found?

- World
- Body
- Mind
**Major Buddhist Mental Resources**

<table>
<thead>
<tr>
<th>Mindfulness</th>
<th>Compassion</th>
<th>View</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigation</td>
<td>Kindness</td>
<td>Intention</td>
</tr>
<tr>
<td>Energy</td>
<td>Altruistic joy</td>
<td>Effort</td>
</tr>
<tr>
<td>Bliss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tranquility</td>
<td>Virtue</td>
<td>Conviction</td>
</tr>
<tr>
<td>Concentration</td>
<td>Wisdom</td>
<td>Generosity</td>
</tr>
<tr>
<td>Equanimity</td>
<td></td>
<td>Patience</td>
</tr>
</tbody>
</table>
MENTAL RESOURCES ARE BUILT FROM BRAIN STRUCTURE
Two wolves in the heart
Neurons that fire together, wire together.
We can use the mind
To change the brain
To change the mind for the better
To benefit ourselves and other beings.
In the Garden of the Mind

1. Be with what is there.
2. Decrease what’s harmful.
3. Increase what’s beneficial.


Mindfulness is present in all three.

“Being with” is primary – but not enough. We also need “wise effort.”
Join us for

**Cultivating Inner Strength - Monastic Daylong [Dana - No Fee Day]**

with Ayya Anandabodhi and Ayya Santacitta

on

**Sunday, July 8**

from 9:30 am - 5 pm.

(Photo by Ed Ritger)
Let’s Try It

- **Notice** that you are basically alright right now.
  - Have the experience.
  - Enrich it.
  - Absorb it.

- **Create** the experience of compassion.
  - Have the experience.
  - Enrich it.
  - Absorb it.
Neurobhavana
The Neuropsychology of Learning

Learning – changing neural structure and function – has two stages:

From **short-term** memory buffers to **long-term** storage

From **state** to **trait**

From **activation** to **installation**.
Inner strengths are grown from experiences of them – activated states – that are installed as traits.
You become more compassionate by installing experiences of compassion.

You become more grateful by installing experiences of gratitude.

You become more mindful by installing experiences of mindfulness.
Most experiences of inner strengths are enjoyable.

They feel good because they are good for us and others.
Without **installation**, there is no learning, no change in the brain.
We’re good at activation but bad at installation.

This is the fundamental weakness in most patient education, human resources training, psychotherapy, coaching, and mindfulness training.
The same research that proves therapy works shows no improvement in outcomes over the last 30 or so years.

Scott Miller
Meanwhile, painful, harmful experiences are being rapidly converted into neural structure.
Velcro for Bad, Teflon for Good

The negativity bias

bad experiences

good experiences
The brain is good at learning from bad experiences but bad at learning from good ones.

Even though learning from good experiences is the primary way to grow resources for well-being.
The Negativity Bias
Taking in the Good
Learning to Take in the Good
Pick a partner and choose an A and a B (A’s go first). Then you’ll take turns, with one partner mainly speaking while the other person listens, exploring this question:

What are some of the good facts in your life these days?
Move around the room, interacting briefly with others, one person at a time.

One person says: “A good fact in my life these days is X.”

The other person says: “I’m glad for you.”

Then switch roles.

Then find another person and do it again.

→ Keep it real. And take it in.
Have a Good Experience
Absorb It
Link Positive and Negative Material
HEAL Yourself

Have a positive experience.

Enrich it.

Absorb it.

Link positive and negative material.
Have It, Enjoy It
Know the mind.

Shape the mind.

Free the mind.
Steadying the Mind
Factors of Concentration

- Setting an intention
- Relaxing the body
- Feeling cared about
- Feeling safer
- Encouraging positive emotion
- Absorbing the benefits
Lateral Networks of Spacious Awareness
<table>
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<tr>
<th><strong>“Doing”</strong></th>
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<tr>
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<td>Nothing to do, nowhere to go</td>
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<tr>
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<td>Sense of peace</td>
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<tr>
<td>Personal, self-oriented perspective</td>
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</tr>
<tr>
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<td>Sensory</td>
</tr>
<tr>
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<td>Now-focused</td>
</tr>
<tr>
<td>Much verbal activity</td>
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<tr>
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<td>Transient contents of mind</td>
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</tr>
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Increased Medial PFC Activation Related to Self-Referencing Thought

Self-Focused (blue) and Open Awareness (red) Conditions
(in the novice, pre MT group)
Self-Focused (blue) and Open Awareness (red) Conditions (following 8 weeks of MT)
## Dual Modes

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Ways to Activate Being Mode

- Relax.
- Focus on bare sensations and perceptions.
- Sense the body as a whole.
- Take a panoramic, “bird’s-eye” view.
- Engage “don’t-know mind”; release judgments.
- Don’t try to connect mental contents together.
- Let experience flow, staying here now.
- Relax the sense of “I, me, and mine.”
Whole Body Awareness

- Sense the breath in one area (e.g., chest, upper lip)
- Sense the breath as a whole: one gestalt, percept
- Sense the body as a whole, a whole body breathing
- Sense experience as a whole: sensations, sounds, thoughts ... all arising together as one unified thing
- This sense of the whole may be present for a second or two, then crumble; just open up to it again.
The Buddha’s Drive Theory of Suffering
A Telling of the Four Noble Truths

There is suffering.

When craving arises, so does suffering.

When craving passes away, so does suffering.

There is a path that embodies and leads to the passing away of this craving and suffering.
What causes craving?

What ends these causes?
The Evolving Brain

The Triune Brain - (P. MacLean 1990)
<table>
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<th>Signal</th>
<th>Strategy</th>
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<td>Avoiding</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Pleasant</td>
<td>Approaching</td>
</tr>
<tr>
<td>Connection</td>
<td>Heartfelt</td>
<td>Attaching</td>
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</table>
Craving Arising . . .

When there is a presumed or felt deficit or disturbance of safety, satisfaction, or connection:

The body fires up into the stress response; outputs exceed inputs; long-term building is deferred.

The mind fires up into:

- **Fear** (Avoiding)
- **Frustration** (Approaching)
- **Heartache** (Attaching)

The brain in allostatic, *Reactive, craving* mode.
Craving Passing Away . . .

With no presumed or felt **deficit or disturbance of safety, satisfaction, and connection:**

The **body** defaults to a sustainable equilibrium of refueling, repairing, and pleasant abiding.

The **mind** defaults to a sustainable equilibrium of:

- **Peace** (Avoiding)
- **Contentment** (Approaching)
- **Love** (Attaching)

The brain in homeostatic, **Responsive**, minimal craving mode.
Choices . . .

Reactive Mode

Responsive Mode
In Buddhism, we work to expand the range of life experiences in which we are free.

U Pandita
Can You Stay in the Green Zone When:

Things are unpleasant?

Things are pleasant?

Things are heartfelt?
With equanimity, you can deal with situations with calm and reason while keeping your inner happiness.

The Dalai Lama
Coming Home, Staying Home

Positive experiences of core needs met - the felt sense of safety, satisfaction, and connection - activate Responsive mode.

Activated Responsive states can become installed Responsive traits. Responsive traits foster Responsive states.

Responsive states and traits enable us to stay Responsive with challenges.
From the 2\textsuperscript{nd} to the 3\textsuperscript{rd} Noble Truth
Mental Resources for Challenges

**Safety** – Grit, protection, relaxation, feeling alright right now, peace

**Satisfaction** – Gratitude, gladness, accomplishment, contentment

**Connection** – Belonging, appreciation, friendship, compassion, love
Pet the Lizard
Feed the Mouse
Hug the Monkey
Peace

Contentment

Love
Cultivation Undoes Craving

We rest the mind upon beneficial states so that the brain may gradually take their shape.

This disentangles us from craving as we increasingly rest in a peace, contentment, and love that is independent of external conditions.

With time, even the practice of cultivation falls away – like a raft that is no longer needed once we reach the farther shore.
Egocentric and Allocentric
Self Is Like a Unicorn

Self-related patterns of information and neural activity are as real as those that underlie the smell of roses.

But that which they point to – a unified, enduring, independent “I” – just doesn’t exist.

Just because there is a sense of self does not mean that there is a self. The brain strings together heterogenous moments of self-ing and subjectivity into an illusion of homogenous coherence and continuity.

Real representations in the brain of a horse point to something that is also real. But the real representations of a unicorn in the brain point to something that is not real.

The real representations of the self in the brain point to another mythical creature: the apparent self.
In reference to the seen, there will be only the seen. To the heard, only the heard. To the sensed, only the sensed. To the cognized, only the cognized.

When for you there will be only the seen in reference to the seen, only the heard in the heard, only the sensed in the sensed, only the cognized in the cognized, then there’s no you in that.

When there’s no you in that, there’s no you there. When there’s no you there, you are neither here nor yonder nor between the two.

This, just this, is the end of all suffering.

The Buddha
Egocentric Perspective

- Based on upper processing streams in the brain that involve: upper portions of the thalamus that confer “self” salience; rear regions of the “default network” (e.g., precuneus, posterior cingulate cortex); parietal regions that construct an enduring and unified sense of “my body in space”

- Establishes “where it is in relation to me”; lower visual field

- Develops earliest in childhood

- “Subjective” - Things exist in relation to me.

- Action-oriented - Focus on reacting to carrots and sticks
Allocentric Perspective

- Based on lower processing streams in the brain that involve: lower regions of the thalamus that confer “world” salience;

- Establishes “what it is independent of me”; upper visual field

- Begins developing around age four

- “Objective” - Things exist in a physical space in which their location is impersonal, not in reference to the viewpoint of an observer.

- This perspective pervades kensho and other forms of non-dual awareness. It is strengthened in open awareness meditations that draw heavily on the alerting, lower attentional system.

- Being-oriented
Normal egocentric/allocentric fluctuations occur ~ 3-4 times a minute.

As one perspective increases, the other decreases.

With “contact,” allocentric processing increases briefly as the new stimulus is considered in its own right.

Then egocentric processing surges forward as one figures out what to do about the “feeling tone” (pleasant, unpleasant, neutral, heartfelt) of the stimulus.
Strengthening Allocentric Processing – 1

- Taking in experiences of the allocentric mode – regarding reality impersonally, panoramic perspective, little sense of “I,” feeling connected – will naturally strengthen its neural substrates.

- Open awareness practices in which there are many moments of new contact would strengthen the “alerting” networks of attention and incline the brain toward allocentric mode.

- Lower regions of the thalamus – with concentrations of GABA neurons – inhibit egocentric processing. GABA is calming; training in tranquility could strengthen these GABA-based nodes and reduce egocentrism.
“Craving” causes egocentric processing (and suffering). Craving itself is caused by a sense of deficit or disturbance in core needs: safety, satisfaction, connection. So repeatedly internalizing the experience of needs being met builds up a sense of fullness and balance, reducing underlying causes of craving and thus egocentric processing.

We can relate to our mind from an egocentric or allocentric perspective. Suffering comes from parts tussling with other parts within an egocentric frame. So abide as mind as a whole.
Each moment of mind depends on a vast network of causes: the body, nature, human culture, and material reality . . . stretching back through human history, the evolution of life, and way back to the Big Bang.

This moment of experience is the local expression of this allness – like a small ripple contains within itself something of the whole ocean.

The felt recognition of mind depending upon this allness, being an expression of it, is the epitome of allocentric mode.
Coming into presence in this moment, continually letting go

Opening into a growing sense of peace . . . contentment . . . love . . .

Disengaging from parts, abiding as mind as a whole

Recognizing mind as a local rippling of a vast sea of causes, opening into being the sea of allness
To study the Way is to study the self.

To study the self is to forget the self.

To forget the self is
To be enlightened by all things.

Dogen
Some Larger Implications
For most of the time our human and hominid ancestors have lived, it was not possible to meet the core needs of everyone. But now the resources and know-how exist to do this. How we handle this unprecedented opportunity will be the central theme of this century.

Improving external conditions is vital – but not enough. Many affluent people dwell in anxiety and anger, frustration and drivenness, and hurt and ill will.

Repeatedly internalizing Responsive experiences develops a “green brain” that is harder to manipulate with threats and fear, greed and consumerism, and “us” vs. “them” rivalries. A critical mass of “green brains” will bring a tipping point that changes the course of human history.
A Fifth Yana?

The “Buddhastream” developed through four major vehicles (yanas): Theravadan, Tibetan, Chan/Zen, and Pure Land.

Could we be helping develop an emergent Fifth Yana, with:

- Many householders engaging deep contemplative practice
- Multiculturalism as both a reality and a value
- Access to and eclectic use of the full array of Buddhist teachings
- Flattening hierarchies
- Naturalizing dharma practice; using science and psychology
- Skillful use of positive experiences; “Western tantra”
- Deconstructing and applying Buddhist practices in non-Buddhist settings (e.g., pain-control clinics, schools, psychotherapy)

85
The root of Buddhism is compassion, and the root of compassion is compassion for oneself.

Pema Chodron
“Anthem”

Ring the bells that still can ring
Forget your perfect offering
There is a crack in everything
That’s how the light gets in
That’s how the light gets in

Leonard Cohen
Suggested Books

See www.RickHanson.net for other great books.

Key Papers - 1

See www.RickHanson.net for other scientific papers.


Hanson, R. 2008. Seven facts about the brain that incline the mind to joy. In *Measuring the immeasurable: The scientific case for spirituality.* Sounds True.
Key Papers - 3


Where to Find Rick Hanson Online

**Hardwiring Happiness: The New Brain Science of Contentment, Calm, and Confidence**

www.rickhanson.net/hardwiringhappiness

Personal website: www.rickhanson.net

Wellspring Institute: www.wisebrain.org

youtube.com/drrhanson

facebook.com/rickhansonphd